



Patent
Attorney's Docket No. 05950-833

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
|---------------------------------------|---|------------------------|
| In re Patent Application of |) | |
| |) | |
| Liu, et al. |) | Group Art Unit: 1650 |
| |) | |
| Application No.: 10/622,046 |) | Examiner: Unassigned |
| |) | |
| Filed: July 16, 2003 |) | Confirmation No.: 2268 |
| |) | |
| For: Heteroatom-Containing Diamondoid |) | |
| Transistors |) | |

FIRST
INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, Applicants hereby submit the following information in conformance with 37 C.F.R. §§ 1.97 and 1.98.

Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited is enclosed. However, copies of the listed U.S. patents and U.S. patent application publications are not enclosed since it is no longer required according to the July 11, 2003 wavier of the requirement for copies of cited U.S. patents and U.S. patent application publications in national patent applications filed after June 30, 2003 and international applications entering the national stage under 35 U.S.C. § 371 after June 30, 2003.

The documents are being submitted within three (3) months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later. Since the documents are being filed within the time period set forth in 37 C.F.R. § 1.97(b) no fee or statement is required.

First Information Disclosure Statement

Application No. 10/622,046

Attorney's Docket No. 005950-833

Page 2

To assist the Examiner, the listed on the attached form PTO-1449. It is respectfully requested that an Examiner-initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: 7-19-04

By: Stephen F. Powell

Stephen F. Powell
Registration No. 43,014
Redwood Shores Office
650-622-2300

P.O. Box 1404
Alexandria, Virginia 22313-1404

Substitute for forms 1449A/PTO & 1449B/PTO

ATTORNEY'S DKT NO.
005950-833APPLICATION NO.
10/622,046INFORMATION DISCLOSURE
STATEMENT BY APPLICANTAPPLICANT
Liu et al.FILING DATE
July 16, 2003GROUP
1650

U.S. PATENT DOCUMENTS

| Examiner Initials | Document Number | Kind Code (if known) | Name of Patentee or Applicant of Cited Document | Issue/Publication Date (MM-DD-YYYY) |
|-------------------|-----------------|----------------------|---|-------------------------------------|
| | 6,376,276 | B1 | Oishi et al. | 04-23-2002 |
| | 6,352,884 | B1 | Yu et al. | 03-05-2002 |
| | 6,340,393 | B1 | Yoshida | 01-22-2002 |
| | 6,335,245 | B2 | Park et al. | 01-01-2002 |
| | 6,274,837 | B1 | Windischmann et al. | 08-14-2001 |
| | 6,235,851 | | Ishii, et al. | 05-22-2001 |
| | 6,162,412 | | Fujimori et al. | 12-19-2000 |
| | 6,110,276 | | Yu et al. | 08-29-2000 |
| | 5,903,015 | | Shiomi et al. | 05-11-1999 |
| | 5,792,256 | | Kucherov et al. | 08-11-1998 |
| | 5,747,118 | | Bunshah et al. | 05-05-1998 |
| | 5,656,828 | | Zachai et al. | 08-12-1997 |
| | 5,653,800 | | Kucherov et al. | 08-05-1997 |
| | 5,632,812 | | Hirabayashi | 05-27-1997 |
| | 5,600,156 | | Nishibayashi et al. | 02-04-1997 |
| | 5,541,423 | | Hirabayashi | 07-30-1996 |
| | 5,531,184 | | Muranaka et al. | 07-02-1996 |
| | 5,478,650 | | Davanloo et al. | 12-26-1995 |
| | 5,476,812 | | Kimoto et al. | 12-19-1995 |
| | 5,470,505 | | Smith et al. | 11-28-1995 |
| | 5,455,432 | | Hartsell et al. | 10-03-1995 |
| | 5,454,880 | | Sariciftci et al. | 10-03-1995 |
| | 5,449,531 | | Zhu et al. | 09-12-1995 |
| | 5,414,189 | | Chen, et al. | 05-09-1995 |
| | 5,389,799 | | Uemoto | 02-14-1995 |
| | 5,382,684 | | Moini et al. | 01-17-1995 |
| | 5,382,809 | | Nishibayashi et al. | 01-17-1995 |
| | 5,371,382 | | Venkatesan et al. | 12-06-1994 |
| | 5,371,378 | | Das | 12-06-1994 |
| | 5,352,908 | | Kobashi et al. | 10-04-1994 |
| | 5,331,183 | | Sariciftci et al. | 07-19-1994 |
| | 5,306,928 | | Kimoto et al. | 04-26-1994 |
| | 5,294,814 | | Das | 03-15-1994 |
| | 5,278,431 | | Das | 01-11-1994 |
| | 5,223,721 | | Iida et al. | 06-29-1993 |
| | 5,210,431 | | Kimoto et al. | 05-11-1993 |
| | 5,177,585 | | Welbourn | 01-05-1993 |
| | 5,171,632 | | Heeger et al. | 12-15-1992 |
| | 5,144,380 | | Kimoto et al. | 09-01-1992 |
| | 5,132,749 | | Nishibayashi et al. | 06-21-1992 |
| | 5,117,267 | | Kimoto et al. | 05-26-1992 |
| | 5,112,775 | | Iida et al. | 05-12-1992 |
| | 5,107,315 | | Kumagai et al. | 04-21-1992 |

| | | |
|--|--|-------------------------------|
| Substitute for forms 1449A/PTO & 1449B/PTO | ATTORNEY'S DKT NO. 005950-833 | APPLICATION NO. 10/622,046 |
| | APPLICANT Liu et al. | |
| | FILING DATE July 16, 2003 | GROUP 1650 |
| | INFORMATION DISCLOSURE STATEMENT BY APPLICANT | |

| U.S. PATENT DOCUMENTS | | | | |
|-----------------------|-----------|--|-------------------|------------|
| | 5,099,296 | | Mort et al. | 03-24-1992 |
| | 5,075,757 | | Ishii et al. | 12-24-1991 |
| | 5,072,264 | | Jones | 12-10-1991 |
| | 5,051,785 | | Beetz, Jr. et al. | 09-24-1991 |
| | 5,019,660 | | Chapman et al. | 05-28-1991 |
| | 5,017,734 | | Baum et al. | 05-21-1991 |
| | 3,832,332 | | Thompson | 08-27-1974 |
| | 3,457,318 | | Capaldi et al. | 07-22-1969 |
| | H1287 | | Zeisse et al. | 02-01-1994 |

| FOREIGN PATENT DOCUMENTS | | | | | | |
|--------------------------|--------------------|-------------------------|---------|-------------------------------------|-----------------------|--|
| Examiner Initials | Document Number | Kind Code (if known) | Country | Date of Publication (MM-DD-YYYY) | Translation Yes No | |
| | 2,545,292 | | DE | 04-1979 | | |
| | 0286306 | A1 | EP | 10-12-1988 | | |
| | 1071141 | A2 | EP | 01-24-2001 | | |
| | 0272418 | A2 | EP | 06-29-1988 | | |
| | WO 04/009577 | A1 | WO | 01-29-2004 | | |
| | WO 02/00505 | | WO | 01-17-2002 | | |
| | WO03/05066 | A1 | WO | 06-19-2003 | | |
| | WO02/057201 | A2 | WO | 07-25-2002 | | |
| | WO 02/058139 | A2 | WO | 07-25-2002 | | |
| | WO 95/06019 | A1 | WO | 03-02-1995 | | |

| NON PATENT LITERATURE DOCUMENTS | |
|---------------------------------|---|
| Examiner Initials | Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. |
| | Partial ISR from PCT/US03/22630 mailed 05/28/2004. |
| | U.S. Patent Application Serial No. 10/046,486 filed January 16, 2002. |
| s | Askeland, D.R., "Electrical Conductivity", Chapter 17, pp 664-667, <i>The Science and Engineering of Materials</i> Second Edition, J. Donald Childress ed. (1989) |
| κ | Balaban et al., "Systematic Classification and Nomenclature of Diamond Hydrocarbons -I, <i>Tetrahedron</i> 34:3599-3606 (1978). |
| | Baugman, G.I., "Dibromination of Adamantane", (1964). |
| | Becker et al, "A Short Synthese of 1-azaadamantan-4-one and the 4r and 4s Isomers of 4-Amino-1-azaadamantane", <i>Synthesis</i> 11:1080-1082 (1992). |
| | Bingham, R.C. et al., Chapter 18 of "Chemistry of Adamantanes", <i>Springer-Verlag</i> (1971). |
| | Bishop, R., et al., "Detection of Non-Conjugative Interactions in Rigid Cyclic Molecules by Using Carbon-13 N.M.R. Shift Values", <i>Aust. J. Chem.</i> 40:249-255 (1987). |
| | Black, R.M. et al., "Adamantane Chemistry. Part 3. Abnormal Hypiodite Reactions of 2-Substituted Adamantan-2-ols; Synthetic Routes to 4-Oxahomo- and 2-Oxa-adamantanes, and 7-Substituted-bicyclo[3.3.1]nona-3-ols", <i>J. Chem. Soc. Perkins Trans.</i> 1410-418 (1980). |
| | Blaney et al, "Chemistry of Diamantane, Part II. Synthesis of 3,5-disubstituted Derivatives", <i>Synthetic Communications</i> 3(6):435-439 (1973). |
| | Boudjouk et al, "Synthesis and Reactivity of 1-Silaadamantyl Systems", <i>Journal of Organometallic Chemistry</i> 2:336-343 (1983). |

| | | |
|--|--|-------------------------------|
| Substitute for forms 1449A/PTO & 1449B/PTO | ATTORNEY'S DKT NO. 005950-833 | APPLICATION NO. 10/622,046 |
| | APPLICANT Liu et al. | |
| | FILING DATE July 16, 2003 | GROUP 1650 |
| | INFORMATION DISCLOSURE STATEMENT BY APPLICANT | |

| NON PATENT LITERATURE DOCUMENTS | |
|---------------------------------|---|
| Examiner Initials | Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. |
| | Boudjouk et al, "The Reaction of Magnesium with cis-1,3,5-Tris(bromomethyl)cyclohexane. Evidence For a Soluble Tri-grignard", <i>Journal of Organometallic Chemistry</i> 281 :C21-C23 (1985). |
| | Bubnov et al, "A Novel Method of Synthesis of 1-azaadamantane from 1-boraadamantane", <i>Journal of Organometallic Chemistry</i> 412 :1-8 (1991). |
| | Cao, G.Z., "Nitrogen and Phosphorus Doping in CVD Diamond", <i>Diamond</i> , edited by M.H. Nazare and A.J. Neves, INSPEC pp. 345-347 (2001). |
| | Chakrabarti et al., "Chemistry of Adamantane. Part II. Synthesis of 1-Adamantyloxyalkylamines", <i>Tetrahedron Letters</i> 60 :6249-6252 (1968). |
| | "Computation Concepts" <i>Chem3D Molecular Modeling and Analysis User's Guide</i> , Chapter 9, pages 123-144. |
| | Courtney, T., Johnston, D.E. McKervey, M.A. and Rooney, J.J., "The Chemistry of Diamantanes. Part 1. synthesis and Some Functionalisation Reactions", <i>J. Chem. Soc. Perkin I</i> 2691-2696 (1972). |
| | Das, K.K., "Electronic Applications of Diamond Films and Coatings", from <i>Diamond Films and Coatings: Development, Properties, and Applications</i> , Robert F. Davis, Ed., Noyes Publications, pp 381-410 (1993). |
| | DeFranceschi, S., et al., "Electronics and the Single Atom", <i>Nature</i> 417 :701-702 (2002). |
| | Eguchi et al, "A Novel Route to the 2-Aza-adamantyl System via Photochemical Ring Contraction of Epoxy 4-Azahomoadamantanes", <i>Journal of Organometallic Chemistry, Commun.</i> , 1147-1148 (1984). |
| | Fernandez, M.J., et al., "NMR Study of 1-Azatricyclo[3.3.1 ³⁻⁷]decane Derivatives", <i>J. Heterocyclic Chem.</i> 26 :307-312 (1989). |
| | Fernandez, M.J., et al., "Synthesis, Structural and Conformational Study of 4- α -(or β)- <i>p</i> -Chlorobenzoyloxy-1-azaadamantane Hydrochloride", <i>J. Heterocyclic Chem.</i> 26 :349-353 (1989). |
| | Fleming, I., et al., "A New Oxindole Synthesis", <i>J. Chem. Soc. Perkin Trans.</i> 1 :617-626 (1991). |
| | Fort, Jr., et al., "Stereochemistry of Hydride Reductions of 4,8-Dihalo-2-thiaadamantanes and Related Thiabicyclo[3.3.1]nonanes", <i>J. Org. Chem.</i> 52 :2396-2399 (1987). |
| | Fox, M.A., et al., "Transmission of Electronic Effects by Icosahedral Carboranes; Skeletal Carbon-13 Chemical Shifts and Ultraviolet-Visible Spectra of Substituted aryl- <i>p</i> -carboranes (1,12-dicarba-closo-dodecaboranes)", <i>J. Chem. Soc., Dalton Trans.</i> 401-411 (1998). |
| | Fritz, G., et al., "Silicon-Carbon Compounds with a Carborundum Structure", Abstract, <i>Angew. Chem, Internat. Edit.</i> 9 (6) (1970). |
| | Fritz, G., et al., "Über die Isolierung Hoherer Carbosilane aus der Pyrolyse des Tetramethylsilans", <i>Z. anorg. allg. Chem.</i> 512 pps. 103-125 (1984). |
| | Gagneux et al, "1-Substituted 2-Heteroadamantanes", <i>Tetrahedron Letters</i> 17 : 1365-1368 (1969). |
| | Galasso, V., "A Green's Function ab Initio Study of the Outer Valence Ionization Potentials of Adamantane and Hereto Derivatives", <i>Journal of Molecular Structure (Theochem)</i> 336 :47-54 (1995). |
| | Gerzon, et al., "The Adamantyl Group in Medicinal Agents, 1. Hypoglycemic N-Arylsulfonyl-N-adamantylureas", <i>Journal of Medicinal Chemistry</i> 6 (6):760-763 (1963). |
| | Hass, et al., Adamantyoxycarbonyl, a New Blocking Group. Preparation of 1-Adamantyl Chloroformate", <i>Journal of the American Chemical Society</i> 88 (9):1988-1992 (1966). |
| | Hahn, J.M. et al., "Strongly Enhanced Stereoselectivity in the Reduction of 5-Substituted Adamantanones by Substitution of C ₅ by Positive Nitrogen", <i>J. Am. Chem. Soc.</i> 114 :1916-1917 (1992). |
| | Hawley, "Condensed Chemical Dictionary", 14th ed., John Wiley & Sons, Inc., 2001. |

| | | |
|--|----------------------------------|-------------------------------|
| Substitute for forms 1449A/PTO & 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT | ATTORNEY'S DKT NO. 005950-833 | APPLICATION NO. 10/622,046 |
| | APPLICANT Liu et al. | |
| | FILING DATE July 16, 2003 | GROUP 1650 |
| | | |

| NON PATENT LITERATURE DOCUMENTS | |
|---------------------------------|--|
| Examiner Initials | Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. |
| | Henkel et al, "Neighboring Group Effects in the β -halo Amines. Synthesis and Solvolytic Reactivity of the anti-4-Substituted 2-Azaadamantyl System", <i>Journal of Organometallic Chemistry</i> 46 :4953-4959 (1981). |
| | Jackman, R.B., "Diamond Optoelectronic Devices", edited by M.H. Nazare and A.J. Neves, INSPEC pp. 393-398 (2001). |
| | Jawdosiuk, M., et al., "Photolysis and Thermolysis of 3-Azidonoradamantane. "Anti-Bredt" Imines, 2-aza-adamant-1-ene, and 4-Azaprotadamant-3-ene", <i>J. Chem. Soc. Perkin Trans</i> 1 :2583-2585 (1984). |
| | Johnston, C., et al., "Boron Doping and Characterisation of Diamond", <i>Diamond</i> , edited by M.H. Nazare and A.J. Neves, INSPEC pp. 337-344 (2001). |
| | Jones, R., et al., "Theory of Aggregation of Nitrogen in Diamond", edited by M.H. Nazare and A.J. Neves, INSPEC pp. 127-129 (2001). |
| | Kalish, R., et al., "Doping of Diamond Using Ion Implantation", <i>Diamond</i> , edited by M.H. Nazare and A.J. Neves, INSPEC pp 321-330 (2001). |
| | Kiflawi, I., et al, "Aggregates of Nitrogen in Diamond", edited by M.H. Nazare and A.J. Neves, INSPEC pp. 130-133 (2001). |
| | Kiflawi, I., et al, "The Nitrogen Interstitial in Diamond", edited by M.H. Nazare and A.J. Neves, INSPEC pp. 134-135 (2001). |
| | Krasutsky, P.A., et al., "A New One-Step Method for Oxaadamantane Synthesis", <i>Tetrahedron Letters</i> 37 (32):5673-5674 (1996). |
| | Krasutsky, P.A., et al., "Observation of a Stable Carbocation in a Consecutive Criegee Rearrangement with Trifluoroacetic Acid", <i>J. Org. Chem.</i> 65 :3926-3933 (2000). |
| | Krishnamurthy et al, "Heteroadamantanes. 2. Synthesis of 3-Heterodiamantanes", <i>Journal of Organometallic Chemistry</i> , 46 (7):1389-1390 (1981). |
| | Kroschwitz, J.I., ed, "Electrically Conductive Polymers" pp 174-219 from <i>High Performance Polymers and Composites</i> , John Wiley & Sons (1991) |
| | Kurtsiefer, C., et al., "Stable Solid-State Source of single Photons", <i>Physical Review Letters</i> 85 (2):290-293 (2000). |
| | Lansbury, et al., "Some Reactions of α -Metalated Ethers", <i>The Journal of Organic Chemistry</i> 27 (6):1933-1939 (1962). |
| | Lawson, S.C., et al., "The effect of Transition Metals (TM) on the Aggregation Kinetics of Nitrogen in Diamond", edited by M.H. Nazare and A.J. Neves, INSPEC pp. 172-173 (2001). |
| | Liaw, D.J, et al., "Synthesis and Characterization of New Polyamides and Polyimides Prepared from 2,2-bis[4-(4-aminophenoxy)phenyl]adamantane", <i>Macromol. Chem. Phys.</i> 200 (6):1326-1332 (1999). |
| | Lin, et al., "Natural Occurrence of Tetramantane (C ₂₂ H ₂₈), Pentamantane (C ₂₆ H ₃₂) and Hexamantane (C ₃₀ H ₃₆) in a Deep Petroleum Reservoir", <i>Fuel</i> 74 (10):1512-1521 (1995). |
| | Lippert, E., et al., "Darstellung und UV-Spektren einiger Fluorenon-Derivate", <i>Angew. Chem.</i> 71 :429-430 (1959). |
| | Makarova, et al., "Psychotropic Activity of Some Aminoketones Belonging to the Adamantane Group" <i>Pharmaceutical Chemistry Journal</i> 34 :6 (2000). |
| | Marchand, A.P., "Diamondoid Hydrocarbons - Delving into Nature's Bounty", <i>Science</i> 299 , 52-52 (2003). |
| | Marchand, A.P., "Polycyclic Cage Compounds: Reagents, Substrates, and Materials for the 21 st Century", <i>Aldrichimica Acta</i> 28 (4):95-104 (1995). |
| | Marshall et al., "N-Arylsulfonyl-N-alkylureas", <i>Journal of Organic Chemistry</i> 23 :927-929 (1958). |

| | | |
|--|--|-------------------------------|
| Substitute for forms 1449A/PTO & 1449B/PTO | ATTORNEY'S DKT NO. 005950-833 | APPLICATION NO. 10/622,046 |
| | INFORMATION DISCLOSURE STATEMENT BY APPLICANT | |
| | APPLICANT Liu et al. | |
| | FILING DATE July 16, 2003 | GROUP 1650 |

| NON PATENT LITERATURE DOCUMENTS | |
|---------------------------------|---|
| Examiner Initials | Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. |
| | Marshall et al., "Further studies on N-Arylsulfonyl-N-alkylureas", <i>Journal of Medicinal Chemistry</i> 6:60-63 (1963). |
| | McKervey, et al., "Synthetic Approaches to Large Diamondoid Hydrocarbons", <i>Tetrahedron</i> 36:9710992 (1980) |
| | Meeuwissen et al, "Synthesis of 1-Phosphaadamantane", <i>Tetrahedron Letters</i> , 39(24):4225-4228 (1983). |
| | Mikhailov, B.M., et al., "Organoboron Compounds", <i>J. Organometallic Chemistry</i> 250:23-31 (1983). |
| | Mirkin, C.A., et al., "Molecular Electronics", <i>Annu. Rev. Phys. Chem.</i> 43:719-754 (1992). |
| | Moiseev, I.K., et al., "Reactions of Adamantanes in Electrophilic Media", <i>Russian Chem. Reviews</i> 68(12):1001-1020 (1999). |
| | Mochizuki, Y, et al., "Polarizability of Silicon Clusters", <i>Chemical Physics Letters</i> 336, 451-456 (2001). |
| | Mukherjee, A.K., et al., "On the Stereochemistry of the Oxidation of 5-Phenyl-2-thiaadamantane", <i>J. Org. Chem.</i> 58:7955-7957 (1993). |
| | Newton, M.E., "Neutral ([N _s] ⁰) and Ionised ([N _s] ⁺) Single Substitutional Nitrogen in Diamond", edited by M.H. Nazare and A.J. Neves, INSPEC pp. 136-141 (2001). |
| | Neves, A.J., et al., "Optical and EPR Properties of Transition Metals in Diamond", edited by M.H. Nazare and A.J. Neves, INSPEC pp. 167-171(2001). |
| | Nordlander et al., "Solvolysis of 1-Adamantylcarbinyl and 3-Homoadamantyl Derivatives. Mechanism of the Neopentyl Cation Rearrangement", <i>Journal of the American Chemical Society</i> 88:19 (1966). |
| | Okoroanyanwu, U. et al., "Alicyclic Polymers for 193 nm Resist Applications: Lithographic Evaluation", <i>Chem. Mater.</i> 10:3329-3333 (1998). |
| | Park, H., et al., "Nanomechanical Oscillations in a Single-C ₆₀ Transistor", <i>Nature</i> 407:57-60 (2000). |
| | Park, S., et al., "endo-Fullerene and Doped Diamond Nanocrystallite-Based Models of Qubits for Solid-State Quantum Computers", <i>J. Nanoscience and Nanotechnology</i> 1(1):75-81 (2001). |
| | Pasini, D., et al. <i>Advanced Materials</i> 12:347-351 (2000). |
| | Pate, B.B., "The Diamond Surface: Atomic and Electronic Structure", <i>Surface Science</i> 165:83-142 (1986). |
| | Pearsall, T.P., ed., "Single-Electron Transistors", pp 8-12 from <u>Quantum Semiconductor Devices and Technologies</u> , Kluwer Academic Publishers (2000). |
| | Pereira, E., "Photoconductivity in Diamond", edited by M.H. Nazare and A.J. Neves, INSPEC pp. 243-244 (2001). |
| | Prins, J.F., "Large Dopants in Diamond", <i>Diamond</i> , edited by M.H. Nazare and A.J. Neves, INSPEC pp 331-336 (2001). |
| | Radziszewski, J.G., et al., "2-Azaadamant-1-ene and 4-Azaprotadamant-3-ene", <i>J. Am. Chem.</i> 106:7996-7998 (1984). |
| | Ramdas, A.K., "A1.2 Modifications to ¹² C-diamond by the ¹³ C-isotope: Raman, Brillouin and Infrared Spectroscopy of Phonons", <i>INSPEC</i> , Properties, Growth and Applications of Diamondoids (2001). |
| | Ramdas, A.K., "A1.3 Electronic Excitations in Isotopically Controlled Diamonds: Infrared and Raman Spectroscopy of Acceptor-Bound Holes", <i>INSPEC</i> , Properties, Growth and Applications of Diamondoids (2001). |
| | Reinhardt, "Biadamantane and some of its Derivatives", <i>Journal of Organic Chemistry</i> 27:3258-3261 (1962). |

| | | |
|--|--------------------|-----------------|
| Substitute for forms 1449A/PTO & 1449B/PTO | ATTORNEY'S DKT NO. | APPLICATION NO. |
| | 005950-833 | 10/622,046 |
| | APPLICANT | |
| | Liu et al. | |
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT | FILING DATE | GROUP |
| | July 16, 2003 | 1650 |

| NON PATENT LITERATURE DOCUMENTS | |
|---------------------------------|--|
| Examiner Initials | Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. |
| | Risch, N., et al., "Triple (Grob) Fragmentation. Retro-Mannish Reactions of 1-Aza-Adamantane Derivatives", <i>Tetrahedron Letters</i> 32 (35):4465-4468 (1991). |
| | Risch, N., et al., "Unusual Reorganization Reactions of 3-Azabicyclo[3.3.1]nonanes", <i>J. Am. Chem. Soc.</i> 113 :9411-9412 (1991). |
| | Roberts, P.J., et al., "anti-Tetramantane, a Large Diamondoid Fragment", <i>Acta. Cryst.</i> B33 :2335-2337 (1977). |
| | Sasaki, T. et al., "New Highly Strained Bridgehead Imines, 2-Azaadamant-1-ene and 4-Azaprotadamant-3-ene", <i>Tetrahedron Letters</i> 23 (47):4969-4972 (1982). |
| | Sasaki, T., et al., "Synthesis and Acidolysis of 3-endo-Azidomethyl- and 3-endo-Azido-bicyclo[3.3.1]non-6-enes. A Novel Synthesis of 4-Azahomoadamant-4-enes", <i>J. Chem. Soc. Perkin Trans I</i> 2529-2534 (1983). |
| | Sasaki, T., et al., "Synthesis of Adamantane Derivatives. 42. Novel Synthesis of 5-Methylene-4-azahomoadamantane Derivatives from 2-Methyl-2-hydroxyadamantane and Their Carbon-13 Nuclear Magnetic Resonance Spectra", <i>J. Org. Chem.</i> 43 (20):3810-3813 (1978). |
| | Sasaki, T., et al., "Photolytic Generation of Anti-Bredt Imines from 1-Azidobicyclo[2.2.2]octane, 1-Azidobicyclo[3.3.1]nonane, and 3-Azidonoradamantane", <i>J. Org. Chem.</i> 48 (22):4067-4072 (1983). |
| | Sasaki et al., "Synthesis of Adamantane Derivatives. II. Preparation of Some Derivatives from Adamantylacetic Acid", <i>Bulletin of the Chemical Society of Japan</i> 41 (1):238-240 (1968). |
| | Sasaki et al., "Substitution Reaction of 1-Bromoadamantane in Dimethyl Sulfoxide: Simple Synthesis of 1-Azidoadamantane", <i>Journal of the American Chemical Society</i> 92 :24 (1970). |
| | Sasaki et al., "Synthesis of Adamantane Derivatives. 39. Synthesis and Acidolysis of 2-Azidoadamantanes. A Facile Route to 4-Azahomoadamant-4-enes", <i>Heterocycles</i> 7 (1):315-320 (1977). |
| | Sasaki et al., "Synthesis of Adamantane Derivatives. 47. Photochemical Synthesis of 4-Azahomoadamant-4-enes and Further Studies on Their Reactivity in Some Cycloadditions", <i>Journal of Organometallic Chemistry</i> 44 (21):3711-3712 (1979). |
| | Sasaki, T., et al., "Synthesis of Adamantane Derivatives. XII. The Schmidt Reaction of Adamantane-2-one", <i>J. Org. Chem.</i> 35 (12):4109 (1970). |
| | Scherz, P., "Semiconductors: Chapter 4", pp 123-190, from <i>Practical Electronics for Inventors</i> , McGraw-Hill (2000). |
| | Service, R.F., "Can Chemists Assemble a Future for Molecular Electronics?", <i>Science</i> 295 :2398-2399 (2002). |
| | Stetter, et al., "Zur Kenntnis der Adamantan-carbonsäure-(1)", <i>Über Verbindungen mit Urotropin-Struktur</i> , XVII, pp. 1161-1166 (1960). |
| | Stetter, et al., "Ein Beitrag zur Frage der Reaktivität von Brückenkopf-Carboniumionen", <i>Über Verbindungen mit Urotropin-Struktur XXVI</i> , <i>Chem. Ber.</i> 96 :550-555 (1963). |
| | Stetter, et al., "Neue Möglichkeiten der Direktsubstitution am Adamantan", <i>Über Verbindungen mit Urotropin-Struktur, XLII</i> , <i>Chem. Ber.</i> 102 (10):3357-3363 (1969). |
| | Stetter et al., "Über Adamantan-phosphonsäure-(1)-dichlorid", <i>Über Verbindungen mit Urotropin-Struktur XLIV</i> , <i>Chem. Ber.</i> 102 (10):3364-3366 (1969). |
| | Stetter, et al., "Herstellung von Derivaten des 1-Phenyl-adamantans", <i>Über Verbindungen mit Urotropin-Struktur, XXXI</i> , <i>Chem. Ber.</i> 97 (12):3488-3492 (1964). |
| | Stetter, H., et al., "Ringschlussreaktionen ausgehend von Bicyclo[3.3.1]nonandion-(3.7) <i>Über Verbindungen mit Urotropin-Struktur, XXX</i> 3480-3487 (1964). |
| | Suginome, H., et al., "The Replacement of the Carbonyl Group of Adamantanone by an Oxygen or sulfur Atom and the One-step Transformation of 2-Methyladamantan-2-ol into 2-Oxa-adamantane; An Efficient New Synthesis of 2-Oxa- and 2-Thiaadamantane", <i>Synthesis</i> 741-743 (1986). |

| | | |
|--|--|-------------------------------|
| Substitute for forms 1449A/PTO & 1449B/PTO | ATTORNEY'S DKT NO. 005950-833 | APPLICATION NO. 10/622,046 |
| | APPLICANT Liu et al. | |
| | FILING DATE July 16, 2003 | GROUP 1650 |
| | INFORMATION DISCLOSURE STATEMENT BY APPLICANT | |

| NON PATENT LITERATURE DOCUMENTS | | | |
|---------------------------------|---|--------------------|--|
| Examiner Initials | Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | | |
| | Suginome et al, "Photoinduced Transformations. 73. Transformations of Five-(and Six-) Membered Cyclic Alcohols into Five-(and Six-) Membered Cyclic Ethers-A New Method of a Two-Step Transformation of Hydroxy Steroids into Oxasteroids", <i>Journal of Organometallic Chemistry</i> 49 :3753-3762 (1984). | | |
| | Udding et al, "A Ring-opening Reaction of and Some Cyclisations to the Adamantane System. A Quasi-favorsky Reaction of a β -bromoketone", <i>Tetrahedron Letters</i> 55 :5719-5722 (1968). | | |
| | Verhoeven, J.W., "From Close contact to Long-Range Intramolecular Electron Transfer", <i>Intramolecular Electron Transfer</i> , John Wiley and Sons, pp 603-644 (1999). | | |
| | von H.U. Daeniker, "206. 1-Hydrazinoadamantan", <i>Helvetica Chimica Acta</i> 50 :2008-2010 (1967). | | |
| | Yang, X. et al., "The Synthesis and Structural Characterization fo Carborane Oligomers Connected by Carbon-Carbon and Carbon-Boron Bonds Between Icosahedra", <i>Inorganica Chimica Acta</i> 240 :371-378 (1995). | | |
| | Zeze, D.A., et al., "Targeting Mass-Selected Cluster Ions for the Deposition of Advanced Carbonaceous Materials Using an Inductively Coupled Plasma", <i>Journal of Applied Physics</i> 91 (4):1819-1827 (20020> | | |
| Examiner Signature | | Date Considered | |

EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. **SEND TO:** Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.